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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,759	10/02/2001	Guido Heirbaut	016782-0232	8740

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EXAMINER

BOYD, JENNIFER A

ART UNIT PAPER NUMBER

1771

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/869,759

Applicant(s)

HEIRBAUT ET AL.

Examiner

Jennifer A Boyd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. The Applicant's Amendments and Accompanying Remarks, filed June 26, 2003, have been entered and have been carefully considered. Claims 19 – 35 are added, claims 1 – 2, 6 – 7 and 9 – 18 are amended and claims 1 – 35 are pending. In view of Applicant's amendments, the Examiner withdraws the 35 U.S.C. 112, 2nd paragraph rejection of claim 17 as set forth in paragraphs 1 – 3 of the previous Office Action dated April 7, 2003. In view of the Applicant's Arguments, the Examiner withdraws all rejections of claims 1 – 18 as set forth in paragraphs 4 – 10 of the previous Office Action dated April 7, 2003. Despite these advances, the invention as currently claimed is not found to be patentable for reasons herein below.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Regarding claim 19, the word "means" is preceded by the word(s) "for transport to move a glass plate during the forming process" on lines 1 and 2 and "for transport with a fabric" in an

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attempt to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967). For the purpose of examination at the time, the Examiner will interpret that the glass plate is brought in contact with the fabric by any sort of transportation means which is typical of any assembly line.

Claim Rejections - 35 USC § 103

6. Claims 1 – 7 and 12 – 28 and 30 – 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tominaga (EP 477,785 A2).

Tominaga is directed to a sheet for molding glass.

As to claims 1, Tominaga teaches a knitted fabric comprising stainless steel filaments (Abstract).

As to claims 6 and 7, Tominaga teaches that at least one of the two textile yarns are metal, particularly stainless steel (Abstract) fibers, therefore, one embodiment of the knitted fabric can comprise all stainless steel fibers.

As to claims 12 and 13, Tominaga teaches that the knitted fabric is made from a machine having a knitting pitch of 10 to 30 gauge (Abstract and column 3, lines 25 – 27).

As to claims 14 – 16, Tominaga teaches that the yarn has a linear density of 40-cotton count comprising stainless steel fibers having diameter of no more than 50µm (column 3, lines 5 – 10 and column 55 – 57). It should be noted that the conversion between cotton count and

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metric count is cotton count = metric number X 1.693. Therefore, Tominaga teaches a yarn with a metric number of 67.7.

As to claim 17, Tominaga teaches the setting of the knitted fabric on a molding surface of a mould to shape glass plates (Abstract).

As to claim 18, Tominaga teaches that knitted fabric is knitted at a specific knitting pitch which minimizes the transfer mark on the glass surface to the point where the mark is barely visible, whereby resulting in an enhanced quality glass product (column 6, lines 40 – 45).

Tominaga teaches a knitted fabric comprising stainless steel filaments (Abstract).

As to claim 19, it should be noted by the use of “means” in the claim language, any type of transport is acceptable. It is reasonable to assume that the glass plate is transported in some fashion to form a plate, otherwise, the forming of the plate could not occur.

As to claim 22, Tominaga teaches a knitted fabric for molding a glass sheet (Abstract). Tominaga teaches that the fabric is disposed on a curved molding surface as seen in Figure 4 (column 5, lines 5 – 10). The knitted fabric comprises stainless steel filaments (Abstract).

As to claim 28, Tominaga teaches that the knitted fabric can contain nonmetallic fibers such as glass fibers (column 2, lines 14 – 16).

As to claims 30 and 31, Tominaga teaches that the knitted fabric can contain mixed filament yarns composed of nonmetallic fibers such as glass fibers and stainless steel fibers (column 2, lines 25 – 30). According to Complete Textile Glossary by Celanese Acetate, a yarn can be a single filament with or without twist (a monofilament) or a number of filaments laid together with or without twist among other embodiments. Tominaga teaches that the filament yarns are plied by twisting two textile yarns (column 3, lines 55 – 58 and column 4, lines 1 – 5).

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As to claim 32, Tominaga teaches that the mixed filament yarns can comprise heat resistant nonmetallic fibers such as carbon fibers, glass fibers and aromatic fibers with stainless steel fibers (column 2, lines 25 – 30). Tominaga teaches that the filament yarns are plied by twisting two textile yarns (column 3, lines 55 – 58 and column 4, lines 1 – 5). Therefore, in one embodiment, one mixed yarn can contain filaments of glass and stainless steel and another mixed yarn can contain carbon and stainless steel fibers. The two mixed yarns can be plied together resulting in a composite yarn containing 3 different types of filaments or yarns.

As to claims 33 and 34, Tominaga teaches that two textile yarns are plied together (column 3, lines 55 – 58 and column 4, lines 1 – 5). Tominaga teaches that the textile yarns can be mixed filament yarns of nonmetallic fibers and stainless steel fibers (column 2, lines 20 – 30). Therefore, both the first yarn and second yarn can be blends of nonmetallic and stainless steel fibers.

As to claims 1 – 2, 4 – 5, 18, 21 – 22, 24 – 25 and 27, Tominaga teaches knitting a fabric with a machine knitting pitch of 10 to 30 gauge (Abstract). The knitted fabric comprises stainless steel fibers with a diameter of 50 μm or less, preferably 4 to 20 μm (column 3, lines 10 – 15). The knitted fabric comprises yarns formed by twisting two 20-count textile yarns (column 3, lines 55 – 60 and column 4, lines 1 – 5), which would result in a 40-count yarn or 67.7 metric number. Tominaga teaches that the knitted fabric can be plain stitch, rib stitch, and pearl stitch but does not limit the structure to those listed (column 4, lines 30 – 35). However, Tominaga fails to disclose that the fabric has 90 or more stitches per square centimeter as required by claims 1 and 22, has 100 or more stitches per square centimeter as required by claim 2, fabric has more than 110 stitches per square centimeter as required by claim 25, a fabric weight between

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600 – 2000 g/m² as required by claims 4, 21, 24 and 27 and a thickness of more than 0.8 mm as required by claim 5. It should be noted that that stitch density is a result effective variable. For example, as the stitch density increases, the fabric becomes heavier, tighter and thicker. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a fabric that has 90 or more stitches per square centimeter as required by claims 1 and 22, has 100 or more stitches per square centimeter as required by claim 2, fabric has more than 110 stitches per square centimeter as required by claim 25, a fabric weight between 600 – 2000 g/m² as required by claims 4, 21, 24 and 27 and a thickness of more than 0.8 mm as required by claim 5. since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the stitches per square centimeter, fabric weight and thickness to create an appropriately stiff and tight fabric to mold glass plates.

As to claims 3, 20 – 23 and 26 although Tominaga does not explicitly teach the claimed air permeability higher than 2400 1/10 cm²/h as required by claims 3 and 22 and an air permeability higher than 4500 1/10 cm²/h as required by claims 20, 23 and 26, it is reasonable to presume that an air permeability higher than 2400 1/10 cm²/h as required by claims 3 and 22 and an air permeability higher than 4500 1/10 cm²/h as required by claims 20, 23 and 26 is inherent to Tominaga. Support for said presumption is found in the use of like materials (i.e. a knitted fabric comprising stainless steel fibers having 90 or more stitches per square centimeter) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of air permeability higher than 2400 1/10 cm²/h as required by claims 3 and 22 and an air permeability higher than 4500

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1/10 cm²h as required by claims 20, 23 and 26 would obviously have been present once the Tominaga product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

7. Claims 1, 3 – 11, 22 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lesage et al. (US 5,388,432).

As to claim 1, Lesage teaches a covering composed of a woven or knitted fabric comprising metal and ceramic fibers (column 4, lines 1 – 10 and 29 – 37).

As to claim 6, Lesage teaches that it is known in the textile industry that 100% metal yarns may be used in knitted fabrics (column 4, lines 29 – 31).

As to claim 7, Lesage teaches in Example 1 that 316 L stainless steel fibers may be used in the knitted structure (column 5, lines 10 – 15).

As to claim 8, 316L grade of stainless steel fibers, according to *Marks' Standard Handbook for Mechanical Engineers*, contain 16 – 18 % Cr and 10 – 15% Ni.

As to claim 22, Lesage teaches a knitted fabric for covering a solid bending form against which a glass sheet is placed during the bending process (column 4, lines 3 – 7 and column 1, lines 6 – 11). Lesage teaches that the knitted covering comprises metal and ceramic fibers (column 4, lines 1 – 10 and 29 – 37).

As to claim 29, Lesage teaches that the knitted covering can contain ceramic fibers (column 4, lines 1 – 10 and 29 – 37).

As to claims 1, 4, 5 and 22, Lesage teaches knitting a fabric comprising stainless steel fibers (column 4, lines 29 – 31). The knitted fabric comprises yarns with a metric number of

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between 50 and 5 (column 4, lines 66 – 69). In one embodiment, the knitted fabric is a jersey structure with yarns comprising stainless steel fibers having a diameter of 12 microns (column 5, lines 10 – 16). However, Lesage fails to disclose that the fabric has 90 or more stitches per square centimeter as required by claims 1 and 22, a fabric weight between 600 – 2000 g/m² as required by claim 4 and a thickness of more than 0.8 mm as required by claim 5. It should be noted that that stitch density is a result effective variable. For example, as the stitch density increases, the fabric becomes heavier, tighter and thicker. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a knitted fabric which has 90 or more stitches per square centimeter as required by claims 1 and 22, a fabric weight between 600 – 2000 g/m² as required by claim 4 and a thickness of more than 0.8 mm as required by claim 5 since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the stitches per square centimeter, fabric weight and thickness to create an appropriately stiff and tight fabric to mold glass plates.

As to claims 3 and 22, Lesage does not explicitly teach the claimed air permeability higher than 2400 1/10 cm²h, it is reasonable to presume that an air permeability higher than 2400 1/10 cm²h is inherent to Lesage. Support for said presumption is found in the use of like materials (i.e. a knitted fabric comprising stainless steel fibers having 90 or more stitches per square centimeter) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of air permeability higher than 2400 1/10 cm²h would obviously have been present once the

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Lesage product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

As to claims 9 – 11, Lesage discloses in Example 1 that the knitted fabric was a jersey-type mesh knit (column 5, lines 10 – 11). Lesage fails to disclose that the jersey knit structures than can be used are $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$ structures. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a knit with $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$ jersey knit structures since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice. *In re Leshin*, 125 USPQ 416. In the present invention, one would have been motivated to create a jersey knit with such structure variations as they are commonly known in the art.

8. Claims 22 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anaf et al. (US 5,631,067).

Anaf et al. is directed to a heterogeneous knitted fabric for shaping of plates of glass (Abstract).

As to claim 22, Anaf teaches a knitted fabric used in conjunction with a mold with a desired curved surface to create a molded glass plate (column 1, lines 5 – 15). Anaf teaches that the knitted fabric can comprise stainless steel fibers (column 2, lines 59 – 65).

As to claim 35, Anaf teaches that the knit fabric can be a double-knitted fabric comprising layers 10 and 11 as seen in Figure 4. Anaf teaches that layers 10 and 11 can have different fiber compositions such as glass fibers on one side and metal fibers on the other side (column 3, lines 20 – 25).

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As to claim 22, Anaf teaches knitting a fabric with varying knitting densities (column 2, lines 30 – 45). The knitted fabric comprises stainless steel fibers with diameter of 6 to 30 μ m (column 2, lines 60 - 65). The stainless steel fibers can be spun into multifilament or staple fiber yarns (whether or not doubled) with a metric number of between 5 and 60 (column 2, lines 60 – 67). However, Anaf fails to disclose that the fabric has 90 or more stitches per square centimeter. It should be noted that that stitch density is a result effective variable. For example, as the stitch density increases, the fabric becomes heavier, tighter and thicker. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a fabric that has 90 or more stitches per square centimeter since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have been motivated to optimize the stitches per square centimeter to create an appropriately stiff and tight fabric to mold glass plates.

As to claim 22, although Anaf does not explicitly teach the claimed air permeability higher than 2400 1/10 cm²h, it is reasonable to presume that an air permeability higher than 2400 1/10 cm²h is inherent to Anaf. Support for said presumption is found in the use of like materials (i.e. a knitted fabric comprising stainless steel fibers having 90 or more stitches per square centimeter) which would result in the claimed property. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of air permeability higher than 2400 1/10 cm²h would obviously have been present once the Anaf product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

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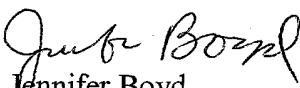
Response to Arguments

9. Applicant's arguments with respect to claims 1 - 18 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 703-305-7082. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Jennifer Boyd
September 20, 2003

